Male specimen (Z.S.I. Registration No. 4220/H6). Compound eyes not contiguous but separated by less than the breadth of median ocellus. Female specimen (Z.S.I. Registration No. 4222/H6). Frons bulges out, interfrontalia separated from parafrontalia by two distinct grooves; wing with posterior cross-vein incomplete.

Distribution: Holarctic Region.

The boundaries of Palæarctic and Oriental regions are not sharply defined and as is well-known there is an intermingling of fauna from both the regions over the Himalayas. The present record of *Coenomyia ferruginea*, a Holarctic species, in Kameng Frontier Division of NEFA, is yet another example of this.

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19. THE TIME OF EMERGENCE AND THE PERIODICITY OF OCCURRENCE OF THE TIGER BEETLE, *CICINDELA CANCELLATA* DEJ. (ORDER: COLEOPTERA—FAMILY: CICINDELIDAE)

Cicindela cancellata Dej. is a fairly common tiger beetle, occurring almost all over India. In Kerala State, it is quite common, particularly in coastal regions and is generally found in sandy areas. It escapes general attention because of its protective coloration which blends very well with the background, on account of a colour pattern involving sandy-cream and black on the elytra. These beetles and their larvae are active predators and have been observed in the field to feed mostly on small ants and sometimes on other small insects such as small nymphs of grasshoppers and leafhoppers.

The authors have been studying the bionomics of these beetles in the field and in the laboratory for about three years. Observations in the Malabar Christian College Compound, Calicut, have shown

that these tiger beetles are not found at all, from November to March. During the remaining period of the year they are found all over the place and several generations are passed through, and towards the close of this period, around the end of October, the individuals in the pupal stage enter into a stage of dormancy and remain so for about four months. Every year, the first emergence of the adult tiger beetles takes place soon after the first or second shower around March or April. The first emergence in the field was observed in the third week of March in 1966, in the first week of April in 1967 and in the second week of March in 1968. But in all these cases, it was observed that the emergence took place soon after the first rains.

The population of the tiger beetles then gradually increases and reaches the peak during the months of July, August and September. Then their numbers steadily decline and eventually reach zero level around November or December. During the period November to March, the population levels of the prey insect species may therefore show a rise in the absence of active predation by these voracious tiger beetles and their larvae, unless this component of environmental resistance is imposed on them by some other predaceous species.

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20. SWARMING OF BUTTERFLIES AND MOTHS

Swarms of butterflies and moths were attracted to the trees of *Caesalpinia coriaria* Willd. in flower, during September-October, 1969, in and around Coimbatore, Tamil Nadu. The most unusual feature about this phenomenon was, that the insects went straight to the flowers of *C. coriaria* even when these trees were surrounded by other flowering plants like *Lantana, Zinnia, Chrysanthemum, Bougainvillea, Petunia, Peltophorum, Margosa* etc. A few butterflies were flying about Lantana, Zinnia and Chrysanthemum, but thousands were seen resting, feeding or flying about the *C. coriaria* trees. The following species of butterflies and moths resting on the trees were collected and identified: